Dell Latitude E6420 and E6420 ATG Owner's Manual

Regulatory Model P15G
Regulatory Type P15G001, P15G002

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

2011 – 07

Rev. A00

Contents

Working on Your Computer

1

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have performed the steps in Working on Your Computer.
- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTE: The color of your computer and certain components may appear differently than shown in this document.

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see *Turning Off Your Computer*).
3. If the computer is connected to a docking device (docked) such as the optional Media Base or Battery Slice, undock it.

CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

4. Disconnect all network cables from the computer.
5. Disconnect your computer and all attached devices from their electrical outlets.
6. Close the display and turn the computer upside-down on a flat work surface.

NOTE: To avoid damaging the system board, you must remove the main battery before you service the computer.

7. Remove the main battery.
8. Turn the computer top-side up.
9. Open the display.
10. Press the power button to ground the system board.

CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the display.

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

11. Remove any installed ExpressCards or Smart Cards from the appropriate slots.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver

- #0 Phillips screwdriver
- #1 Phillips screwdriver
- Small plastic scribe
- Flash BIOS update program CD

Turning Off Your Computer

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Shut down the operating system:

   - In Windows Vista :

     Click **Start** , then click the arrow in the lower-right corner of the **Start** menu as shown below, and then click **Shut Down**.

   - In Windows XP:

     Click **Start** → **Turn Off Computer** → **Turn Off** . The computer turns off after the operating system shutdown process is complete.
2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 4 seconds to turn them off.

After Working Inside Your Computer

After you complete any replacement procedure, ensure you connect any external devices, cards, and cables before turning on your computer.

CAUTION: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

1. Connect any external devices, such as a port replicator, battery slice, or media base, and replace any cards, such as an ExpressCard.
2. Connect any telephone or network cables to your computer.

CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.

3. Replace the battery.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

ATG Handle

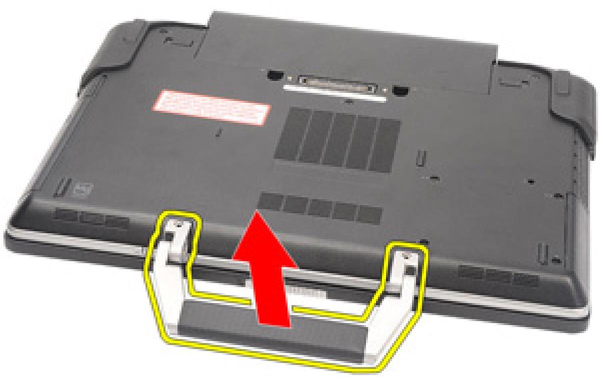
2

Removing The ATG Handle

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the screws that secure the ATG handle to the computer.



3. Remove the ATG handle out of the computer.



Installing The ATG Handle

1. Place the ATG handle and tighten the screws that secure it to the computer.
2. Follow the procedures in *After working inside your computer*.

ATG Port Cover

3

Removing the ATG Port Cover

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the screws on the right ATG Port Cover.



3. Remove the right ATG port cover.



4. Remove the screws on the left ATG port cover.



5. Remove the left ATG Port Cover.



Installing The ATG Port Cover

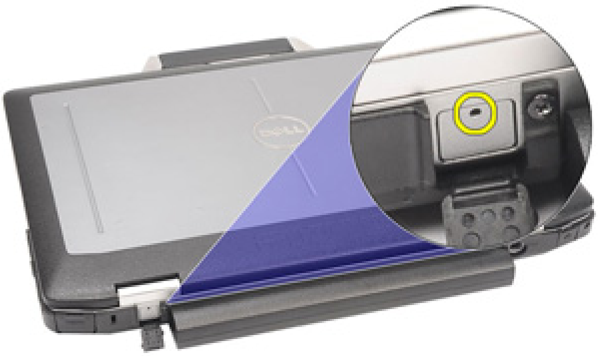
1. Place the ATG Port Covers and tighten the screws that secure it to the computer.
2. Follow the procedures in *After working inside your computer*.

Modem Connector Plug

4

Removing the Modem Connector Plug

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *battery*.
3. Pop open the rubber cover.
4. Identify the pin hole.



5. Insert a pin into the hole and pull the pin upwards to release the latch cover.



6. Remove the cover.



Installing the Modem Connector Plug

1. Place the modem cover.
2. Identify the pin hole and insert a pin into the hole and pull the pin to lock the cover.
3. Lock the rubber cover.
4. Install the *Battery*.
5. Follow the procedures in *After Working Inside Your Computer*.

ExpressCard 5

Removing the ExpressCard

1. Follow the procedures in *Before Working On Your Computer*.
2. Press in on the ExpressCard to release it from the computer.



3. Slide the ExpressCard out of the computer.



Installing the ExpressCard

1. Slide the ExpressCard into its slot until it clicks into place.
2. Follow the procedures in *After working inside your computer*.

Battery

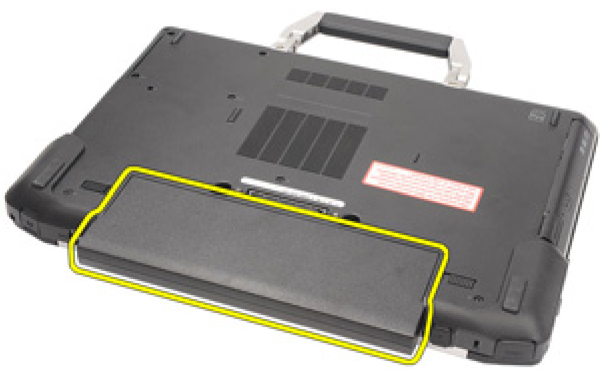
6

Removing the Battery

1. Follow the procedures in *Before Working On Your Computer*.
2. Slide the battery latches toward the unlock position.



3. Slide the battery out of the computer and remove it.



Installing the Battery

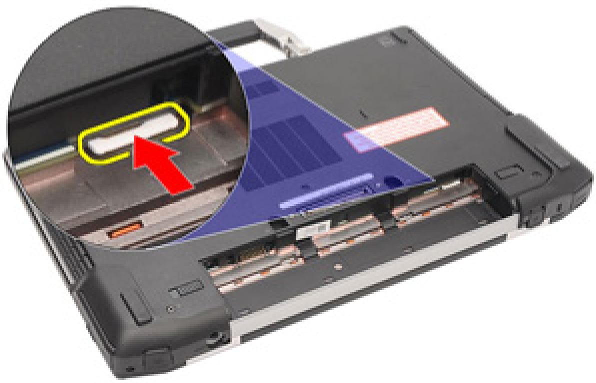
1. Slide the battery into its slot until it clicks into place.
2. Follow the procedures in *After working inside your computer*.

Subscriber Identity Module (SIM) Card

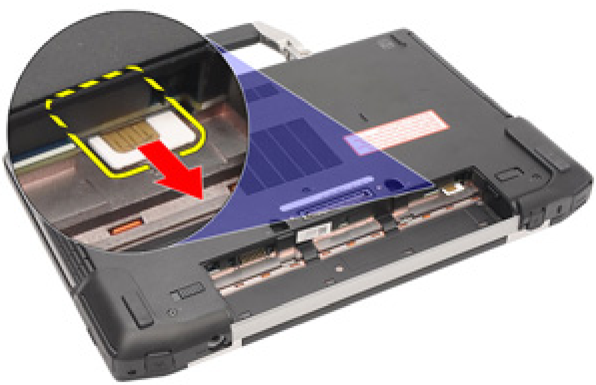
7

Removing the Subscriber Identity Module (SIM) Card

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Insert the SIM card into the slot.



4. Remove the SIM card from the system.



Installing the Subscriber Identity Module (SIM) Card

1. Slide the SIM card into its slot.
2. Install the *Battery*.
3. Follow the procedures in *After Working Inside Your Computer*.

Secure Digital (SD) Card

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Removing the Secure Digital (SD) Card

1. Follow the procedures in *Before Working On Your Computer*.
2. Press in on the SD card to release the SD card from the computer.



3. Slide the SD card out of the computer.



Installing the Secure Digital (SD) Card

1. Slide the Secure Digital (SD) card into its slot until it clicks into place.
2. Follow the procedures in *After working inside your computer*.

Base Cover

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Removing the Base Cover

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the screws that secure the base cover to the computer.



7. Lift the base cover up and away from the computer.



Installing the Base Cover

1. Place the base cover to align the screw holes correctly with the computer.
2. Tighten the screws that secure the base cover to the computer.
3. Install the *Secure Digital (SD) Card*.
4. Install the *Battery*.
5. Install the *ATG Port Cover* (only for E6420 ATG systems).
6. Install the *ATG Handle* (only for E6420 ATG systems).
7. Follow the procedures in *After Working Inside Your Computer*.

Hard Drive

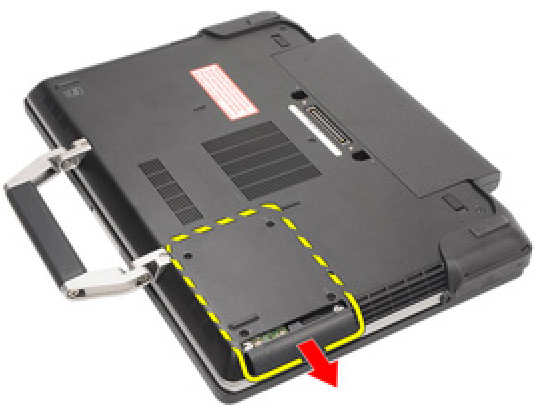
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Removing the Hard Drive

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Remove the screws that secure the hard drive to the computer.



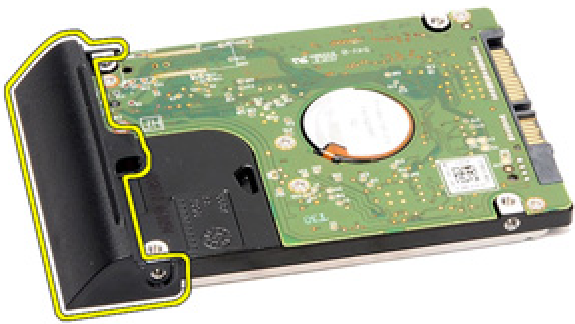
4. Slide and remove the hard drive out of the computer.



5. Remove the screw that secures the hard drive caddy to the hard drive.



6. Pull and remove the hard drive caddy away from the hard drive.



Installing the Hard Drive

1. Attach the hard drive caddy to the hard drive.
2. Tighten the screw to secure the hard-drive caddy to the hard drive.
3. Slide the hard drive into the computer.
4. Replace and tighten the screws that secure the hard drive to the computer.
5. Install the *Battery*.
6. Follow the procedures in *After working inside your computer*.

Optical Drive

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Removing The Optical Drive

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Push in the drive latch into the slot.



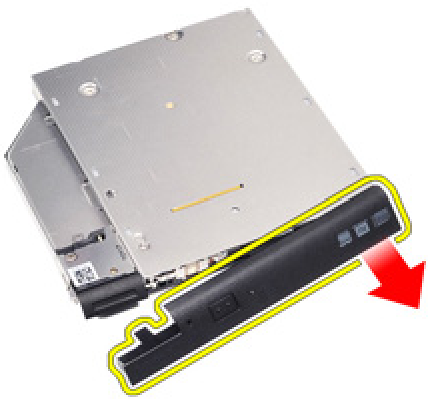
4. Pull the optical drive using the drive latch.



5. Pull the optical drive door from one side to release it.



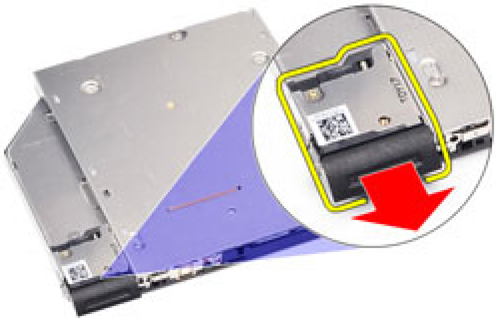
6. Pull the other side of the optical drive door to release it completely from the optical drive.



7. Remove the screw that secures the drive latch to the optical drive.



8. Remove the drive latch from the optical drive.



9. Remove the screws that secures the drive latch bracket to the optical drive.



10. Remove the drive latch bracket from the optical drive.



Installing the Optical Drive

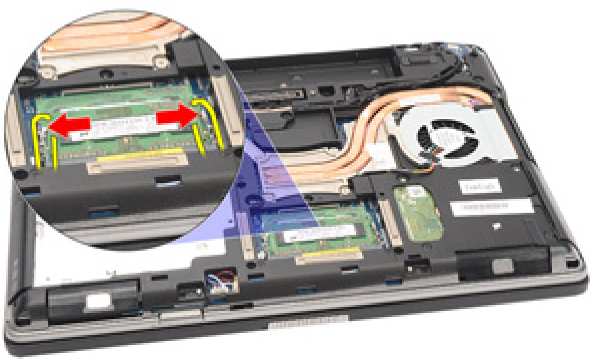
1. Insert the drive latch bracket into the optical drive.
2. Tighten the screws that secure the drive latch bracket to the optical drive.
3. Insert the drive latch into the optical drive.
4. Tighten the screw that secures the drive latch to the optical drive.
5. Push one side of the optical drive door to insert it completely into the optical drive.
6. Pull the optical drive door from one side to insert it from the side.
7. Insert the optical drive using the drive latch.
8. Place the drive latch into the slot.
9. Install the *Battery*.
10. Follow the procedures in *After working inside your computer*.

Memory Card

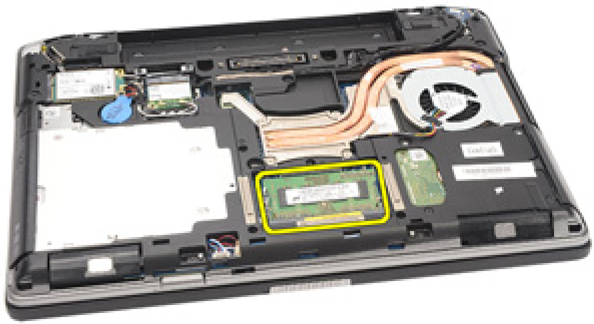
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Removing the Memory Card

1. Follow the procedures in *Before Working On Your Computer*
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *battery*.
5. Remove the *Secure Digital (SD) card*.
6. Remove the *base cover*.
7. Use your fingertips to spread apart the securing clips on each end of the memory module connector until the memory module pops up.



8. Remove the memory module from its connector on the system board by drawing the module from the system board at a 45-degree angle.



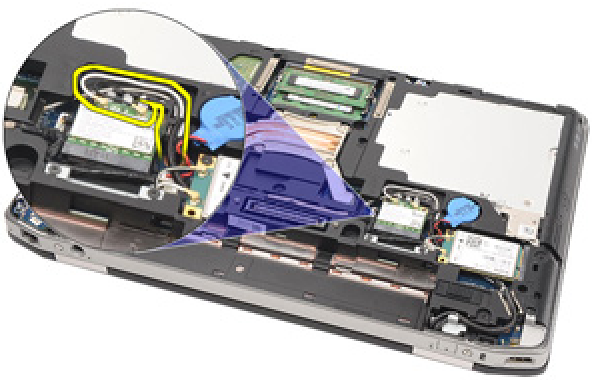
Installing the Memory Card

1. Push the memory module into the memory slot.
2. Press the clips to secure the memory module to the system board.
3. Install the *Base Cover*.
4. Install the *Secure Digital (SD) card*.
5. Install the *Battery*.
6. Install the *ATG Port Cover* (only for E6420 ATG systems).
7. Install the *ATG Handle* (only for E6420 ATG systems).
8. Follow the procedures in *After Working Inside Your Computer*.

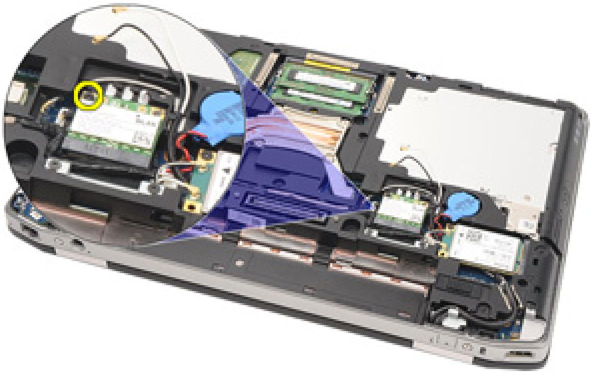
Wireless Local Area Network (WLAN) Card 13

Removing the Wireless Local Area Network (WLAN) Card

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *battery*.
5. Remove the *Secure Digital (SD) card*.
6. Remove the *base cover*.
7. Disconnect the antenna cables from the WLAN card.



8. Remove the screw that secures the WLAN card to the computer.



9. Slide and remove the WLAN card out from its slot on the system board.



Installing the Wireless Local Area Network (WLAN) Card

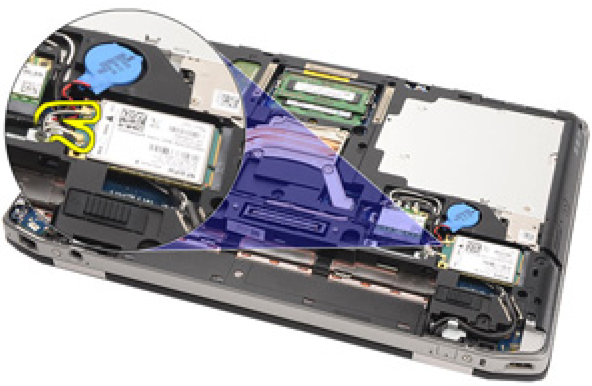
1. Insert the WLAN card into its connector at a 45–degree angle.
2. Replace and tighten the screw that secures the WLAN card to the computer.
3. Connect the antenna cables to their respective connectors marked on the WLAN card.
4. Install the *ATG Port Cover* (only for E6420 ATG systems).
5. Install the *ATG Handle* (only for E6420 ATG systems).
6. Install the *base cover*.
7. Install the *Secure Digital (SD) card*.
8. Install the *battery*
9. Follow the procedures in *After Working Inside Your Computer*.

Wireless Wide Area Network (WWAN) Card

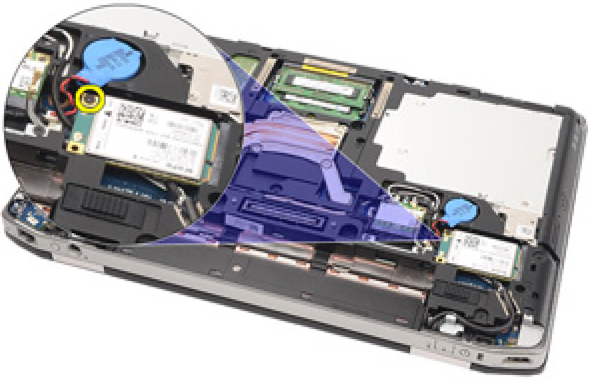
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Removing the Wireless Wide Area Network (WWAN) Card

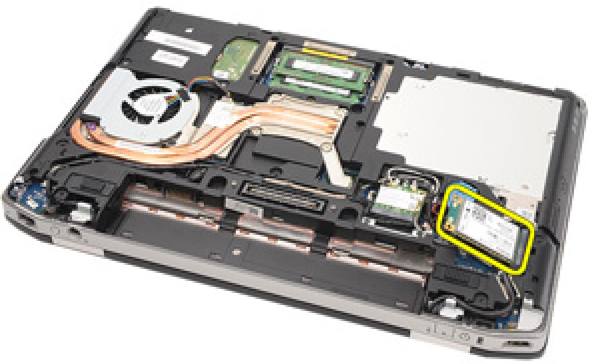
1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the *Base Cover*.
7. Disconnect the antenna cables from the WWAN card.



8. Remove the screw that secures the WWAN card to the computer.



9. Slide the WWAN card from its connector and remove it from the computer.



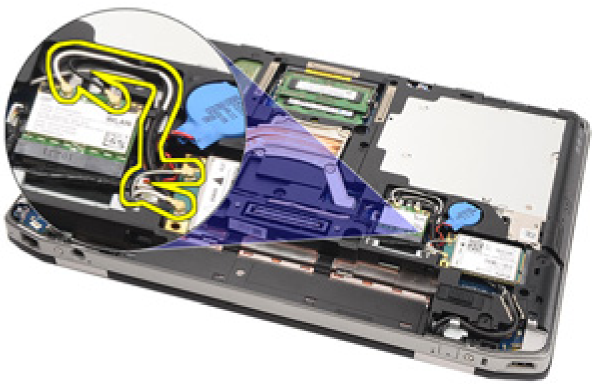
Installing the Wireless Wide Area Network (WWAN) Card

1. Insert the WWAN card into its connector at a 45–degree angle.
2. Replace and tighten the screw that secures the WWAN card to the computer.
3. Connect the antenna cables to their respective connectors marked on the WWAN card.
4. Install the *Base Cover*.
5. Install the *Secure Digital (SD) Card*.
6. Install the *Battery*.
7. Install the *ATG Port Cover* (only for E6420 ATG systems).
8. Install the *ATG Handle* (only for E6420 ATG systems).
9. Follow the procedures in *After Working Inside Your Computer*.

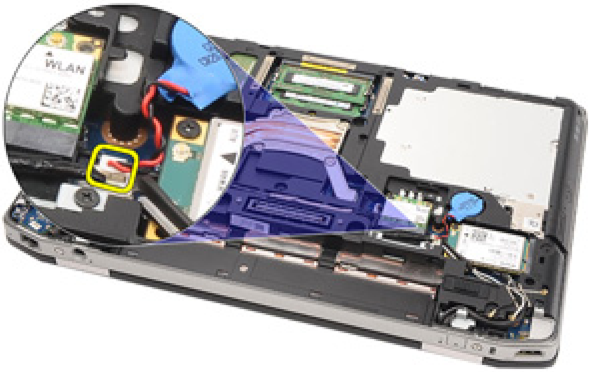
Coin-Cell Battery 15

Removing the Coin-Cell Battery

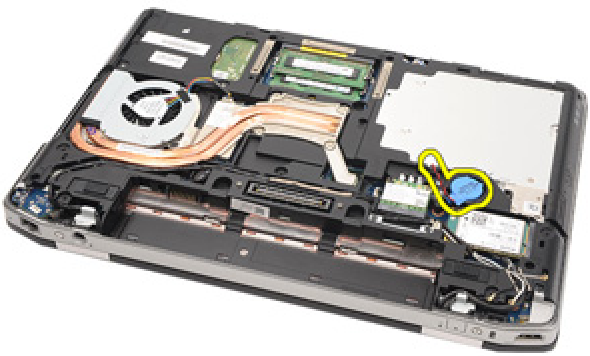
1. Follow the procedures in *Before Working on Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the *Base Cover*.
7. Disconnect any antennas routed over the coin cell battery.



8. Disconnect the coin-cell battery cable from the system board.



9. Release and remove the coin-cell battery from the computer.



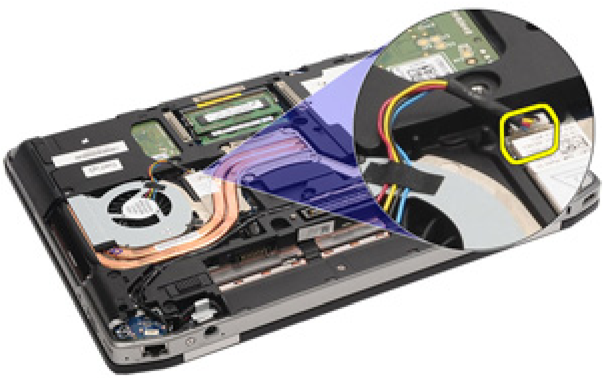
Installing the Coin-Cell Battery

1. Place the coin-cell battery in its location.
2. Connect the coin-cell battery cable to the system board.
3. Connect any antennas that were routed over the coin cell battery.
4. Install the *Base Cover*.
5. Install the *Secure Digital (SD) card*.
6. Install the *Battery*.
7. Install the *ATG Port Cover* (only for E6420 ATG systems).
8. Install the *ATG Handle* (only for E6420 ATG systems).
9. Follow the procedures in *After Working Inside Your Computer*.

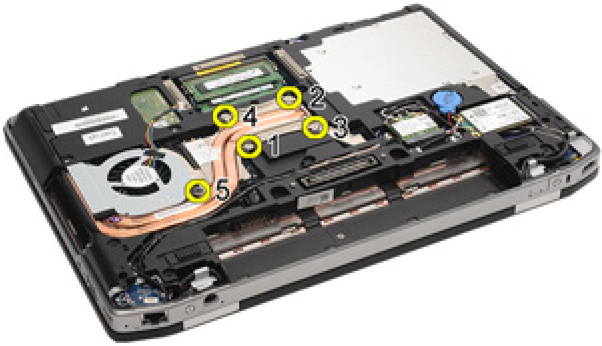
Heat Sink 16

Removing The Heat Sink

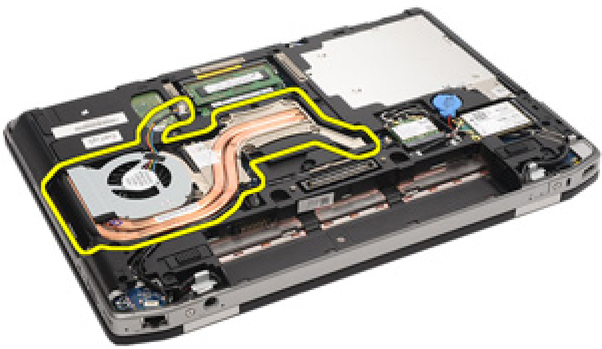
1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the *Base Cover*.
7. Disconnect the heat sink assembly cable.



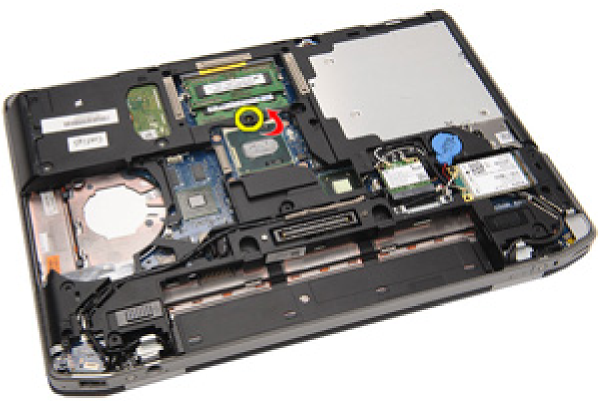
8. Loosen the screws securing the heat sink.



9. Remove the heat sink assembly from the system.



10. Rotate the processor cam lock in a counter-clockwise direction.



11. Remove the processor from the system.



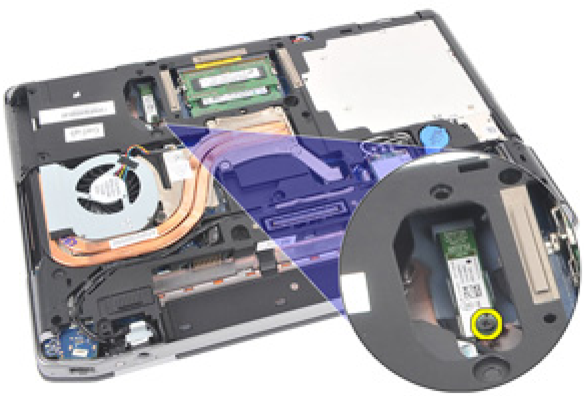
Installing The Heat Sink

1. Insert the processor back into the system.
2. Rotate the processor cam lock in a clockwise direction.
3. Place the heat sink assembly into the system.
4. Tighten the four screws securing the heat sink.
5. Connect the heat sink assembly cable.
6. Install the *Base Cover*.
7. Install the *Secure Digital (SD) Card*.
8. Install the *Battery*.
9. Install the *ATG Port Cover* (only for E6420 ATG systems).
10. Install the *ATG Handle* (only for E6420 ATG systems).
11. Follow the procedures in *After Working Inside Your Computer*.

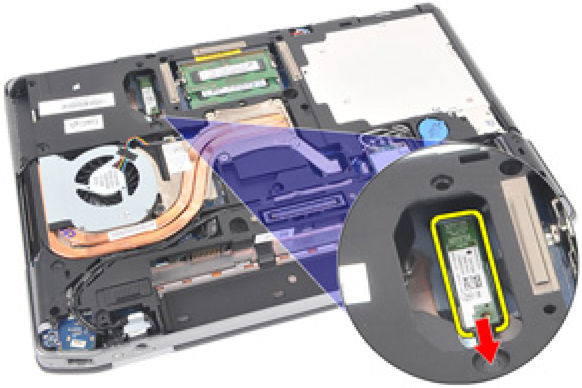
Bluetooth Card 17

Removing the Bluetooth Card

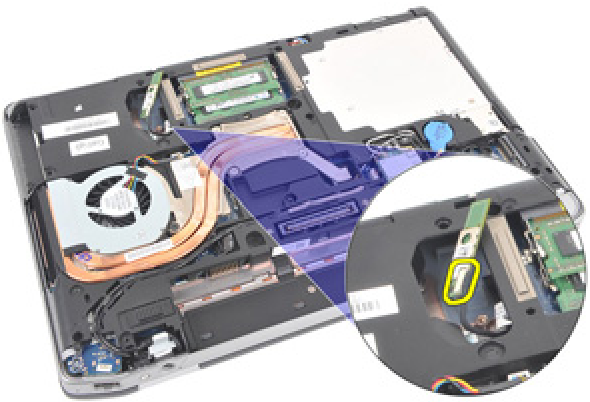
1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *Hard Drive*.
8. Remove the screw that secures the bluetooth card to the computer



9. Remove the bluetooth card from the holder.



10. Disconnect the bluetooth cable.



Installing the Bluetooth Card

1. Connect the bluetooth cable to the bluetooth card.
2. Replace and tighten the screw to secure the bluetooth card to the computer.
3. Install the *Hard Drive*.
4. Install the *Base Cover*.
5. Install the *SD Card*.
6. Install the *Battery*.
7. Install the *ATG Port Cover* (only for E6420 ATG systems).
8. Install the *ATG Handle* (only for E6420 ATG systems).
9. Follow the procedures in *After Working Inside Your Computer*.

Keyboard Trim

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Removing the Keyboard Trim

1. Follow the procedures in *Before Working On Your Computer*.
2. Using a plastic scribe, pry the keyboard trim from the top edge to release it from the computer.



3. Pry along the sides.



4. Release the tabs part of the trim.



5. Gently lift the keyboard trim to release it from the computer.



Installing the Keyboard Trim

1. Align the keyboard trim with the keyboard and gently snap it into place.
2. Follow the procedures in *After Working Inside Your Computer*.

Keyboard

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Removing the Keyboard

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Remove the *Keyboard Trim*.
4. Remove the screws that secure the keyboard at the bottom of the computer.



5. Remove the screws that secure the keyboard on the system.



6. Carefully flip the keyboard over and lay it toward the display.



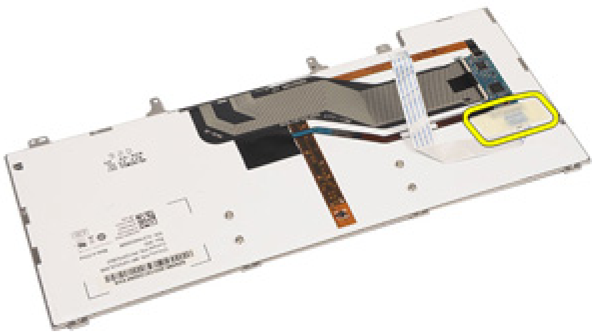
7. Disconnect the keyboard cable from the system board.



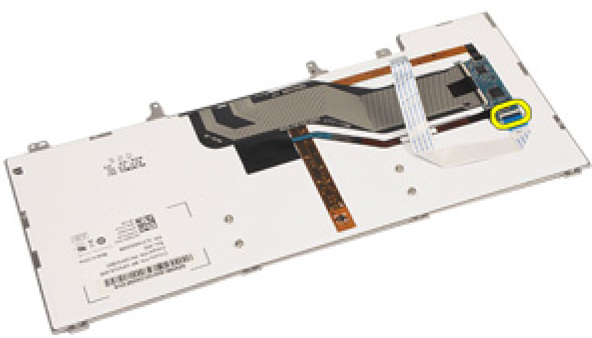
8. Remove the keyboard from the computer.



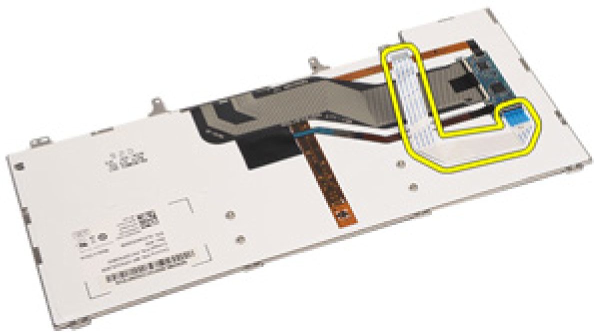
9. Remove the tape securing the keyboard cable from the keyboard.



10. Unlock the cable holder.



11. Disconnect and remove the keyboard cable from the keyboard.



Installing the Keyboard

1. Connect the keyboard cable and secure it to the keyboard using the tape.
2. Connect the keyboard cable to its connector on the system board.
3. Replace and tighten the screws that secure the keyboard to the computer.
4. Install the *Battery*.
5. Install the *Keyboard Trim*
6. Follow the procedures in *After Working Inside Your Computer*.

Modem Card 20

Removing the Modem Card

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Remove the *Keyboard Trim*.
4. Remove the *Keyboard*.
5. Remove the screw securing the modem card to the computer.



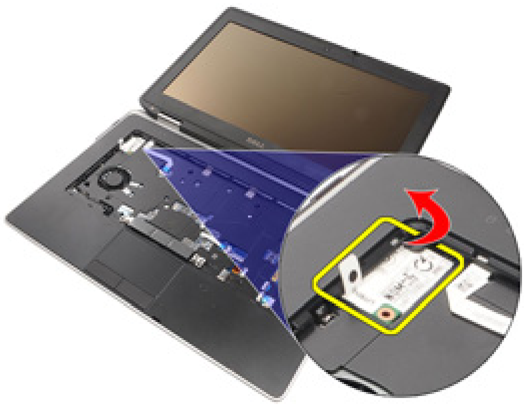
6. Pull out the tab from underneath the palmrest.



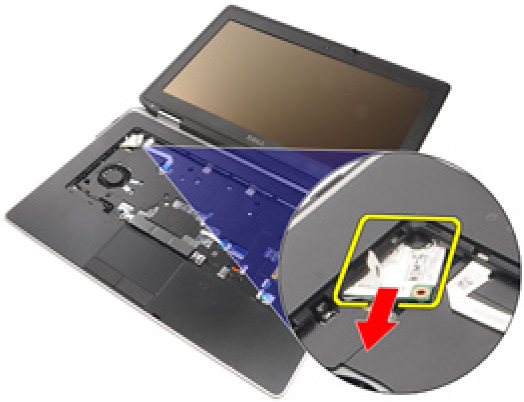
7. Lift the tab to disconnect the holder.



8. Rotate the modem card at an angle.



9. Remove modem card from the slot away from the computer.



10. Disconnect the modem cable from the modem card and remove it from the system.



Installing the Modem Card

1. Connect the modem cable to the modem card on the system board.
2. Place the modem card in its slot in the computer.
3. Tighten the screw securing the modem card to the system.
4. Install the *Keyboard Trim*.
5. Install the *Keyboard*.
6. Install the *Battery*.
7. Follow the procedures in *After working inside your computer*.

Palm Rest 21

Removing the Palm Rest Assembly

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the *Base Cover*.
7. Remove the *Optical Drive*.
8. Remove the *Hard Drive*.
9. Remove the *WWAN Card*.
10. Remove the *Bluetooth Card*.
11. Remove the *Keyboard Trim*.
12. Remove the *Keyboard*.
13. Remove the screws that secure the palm rest assembly to the computer.



14. Turn the system and remove the screws that secure the palm rest assembly to the computer.



15. Release and disconnect the LED, smart card, touchpad, RFID, and ExpressCard cable from the system board.



16. Using a plastic scribe, gently pry out the top right corner of the palm rest and run along the scribe to the right side of the palm rest to release the snaps.



17. Continue to use the scribe to run along the top and left side of the palm rest until all snaps are released.



18. Lift the top side at a 25–degree angle, pull the palm rest towards the screen, and remove it from the computer.



Installing the Palm Rest Assembly

1. Align the palm rest assembly with the computer and gently snap it into place.
2. Replace and tighten the screws that secure the palm rest assembly to the system board.
3. Connect the LED, smart card, touchpad, RFID, and ExpressCard cables to the system board.
4. Replace and tighten the screws that secure the palm rest assembly to the computer.
5. Install the *Keyboard*.
6. Install the *Keyboard Trim*.
7. Install the *Bluetooth Card*.
8. Install the *WWAN Card*.
9. Install the *Hard Drive*.
10. Install the *Optical Drive*.
11. Install the *Base Cover*.
12. Install the *Secure Digital (SD) Card*.
13. Install the *Battery*.
14. Install the *ATG Port Cover* (only for E6420 ATG systems).
15. Install the *ATG Handle* (only for E6420 ATG systems).
16. Follow the procedures in *After Working Inside Your Computer*.

Smart Card Reader 22

Removing the Smart Card

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the *Base Cover*.
7. Remove the *Hard Drive*.
8. Remove the *Keyboard Trim*.
9. Remove the *Keyboard*.
10. Remove the *Palmrest Assembly*.
11. Remove the Smart Card Reader cable from the system board.



12. Remove the screws securing the Smart Card Reader to the computer.



13. Remove the Smart Card Reader from the computer.



Installing the Smart Card

1. Replace the Smart Card Reader in the computer in its original position.
2. Tighten the screws of the Smart Card Reader.
3. Connect the Smart Card Reader cable on the system board.
4. Install the *Palmrest Assembly*.
5. Install the *Keyboard*.
6. Install the *Keyboard Trim*.
7. Install the *Hard Drive*.
8. Install the *Base Cover*.
9. Install the *SD Card*.
10. Install the *Battery*.
11. Install the *ATG Port Cover* (only for E6420 ATG systems).
12. Install the *ATG Handle* (only for E6420 ATG systems).
13. Follow the procedures in *After Working Inside Your Computer*.

Media Board 23

Removing The Media Board

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the *Optical Drive*.
7. Remove the *Base Cover*.
8. Remove the *Hard Drive*.
9. Remove the *WWAN Card*.
10. Remove the *Bluetooth Card*.
11. Remove the *Keyboard Trim*.
12. Remove the *Keyboard*.
13. Remove the *Palmrest Assembly*.
14. Disconnect the media board cable from the system board.



15. Remove the screws that secure the media board to the computer.



16. Remove the media board from the computer.



Installing the Media Board

1. Align the media board to its original position on the computer.
2. Replace and tighten the screws that secure the media board to the computer.
3. Connect the media board cable to the system board.
4. Install the ATG Handle (for E6420 ATG systems only).
5. Install the ATG Port Cover (for E6420 ATG systems only).
6. Install the *Palmrest Assembly*.
7. Install the *Keyboard*.
8. Install the *Keyboard Trim*.
9. Install the *WWAN Card*.
10. Install the *Bluetooth Card*.
11. Install the *Hard Drive*.
12. Install the *Optical Drive*.
13. Install the *Base Cover*.
14. Install the *SD Card*.
15. Install the *Battery*.
16. Install the *ATG Port Cover* (only for E6420 ATG systems).
17. Install the *ATG Handle* (only for E6420 ATG systems).
18. Follow the procedures in *After Working Inside Your Computer*.

ExpressCard Cage 24

Removing the ExpressCard Cage

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *SD Card*.
6. Remove the *Base Cover*.
7. Remove the *Optical Drive*.
8. Remove the *Hard Drive*.
9. Remove the *Bluetooth Card*
10. Remove the *Keyboard Trim*.
11. Remove the *Keyboard*.
12. Remove the *Palmrest Assembly*.
13. Remove the screws securing the ExpressCard cage to the computer.



14. Lift the ExpressCard slot to a 45–degree angle and remove the slot.



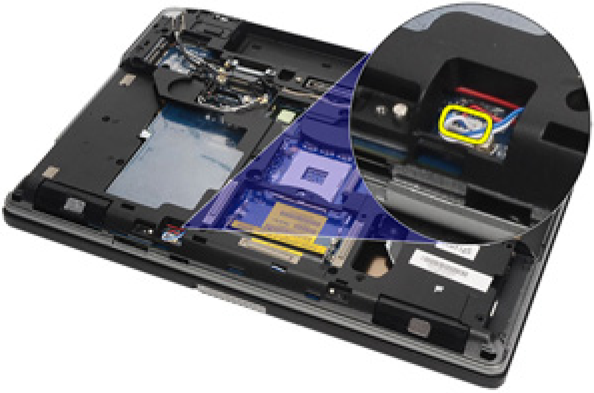
Installing the ExpressCard Cage

1. Align the ExpressCard cage into its slot.
2. Replace and tighten the screws securing the ExpressCard cage to the computer.
3. Install the *Palm rest Assembly*.
4. Install the *Keyboard*.
5. Install the *Keyboard Trim*.
6. Install the *Bluetooth Card*.
7. Install the *Hard Drive*.
8. Install the *Optical Drive*.
9. Install the *Base Cover*.
10. Install the *Secure Digital (SD) Card*.
11. Install the *Battery*.
12. Install the *ATG Port Cover* (only for E6420 ATG systems).
13. Install the *ATG Handle* (only for E6420 ATG systems).
14. Follow the procedures in *After working inside your computer*.

System Board Components 25

Removing the System Board

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *ExpressCard*.
8. Remove the *Optical Drive*.
9. Remove the *Memory*.
10. Remove the *Hard Drive*.
11. Remove the *WLAN Card*.
12. Remove the *WWAN Card*.
13. Remove the *Coin Cell Battery*.
14. Remove the *Heat Sink and Processor*.
15. Remove the *Bluetooth Card*.
16. Remove the *Keyboard Trim*.
17. Remove the *Keyboard*.
18. Remove the *Modem Card*
19. Remove the *Palmrest Assembly*.
20. Remove the *ExpressCard Cage*.
21. Disconnect and release the speaker cables from the system board.



22. Remove the screws from the video cable holder.



23. Remove the video cable holder.



24. Disconnect the video camera and LED cables from the system board.



25. Remove the screw that secures the system board to the computer.



26. Flip and remove the screws from the system board.



27. Remove the Smart Card reader cable, Media Board cable, and DC-in Cable.



28. Disconnect the motherboard from the IO Board.



29. Slide to unlock system board from the port connectors.



30. Remove the system board.



Installing the System Board

1. Align the system board into its original position on the computer.
2. Connect the system board to the I/O board.
3. Connect the Smart Card reader cable, Media Board cable, and DC-in Cable to the system board.
4. Replace and tighten the screws that secure the system board to the computer.
5. Route and connect the video camera and LED cables to the system board.
6. Place the video cable holder and tighten the screws securing the video cable holder to the system board.
7. Connect the speaker cable to the system board.
8. Install the *ExpressCard Cage*
9. Install the *Palmrest Assembly*.
10. Install the *Modem Card*.
11. Install the *Keyboard*.
12. Install the *Keyboard Trim*.
13. Install the *Bluetooth Card*.
14. Install the *Heat Sink and Processor*.
15. Install the *Coin Cell Battery*.
16. Install the *WWAN Card*.
17. Install the *WLAN Card*.
18. Install the *Hard Drive*.
19. Install the *Memory*.
20. Install the *Optical Drive*.
21. Install the *ExpressCard*.
22. Install the *Base Cover*.
23. Install the *SD Card*.
24. Install the *Battery*.
25. Install the *ATG Port Cover* (only for E6420 ATG systems).
26. Install the *ATG Handle* (only for E6420 ATG systems).
27. Follow the procedures in *After Working Inside Your Computer*.

Speaker 26

Removing the Speakers

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *ExpressCard*.
8. Remove the *Optical Drive*.
9. Remove the *Memory*.
10. Remove the *Hard Drive*.
11. Remove the *WLAN Card*.
12. Remove the *WWAN Card*.
13. Remove the *Coin Cell Battery*.
14. Remove the *Heat Sink and Processor*.
15. Remove the *Bluetooth Card*.
16. Remove the *Keyboard Trim*.
17. Remove the *Keyboard*.
18. Remove the *Modem Card*.
19. Remove the *Palmrest Assembly*.
20. Remove the *ExpressCard Cage*.
21. Remove the *System Board*.
22. Remove the screws from the speaker assembly.



23. Unthread the speaker cable.



24. Remove the speaker from the system.



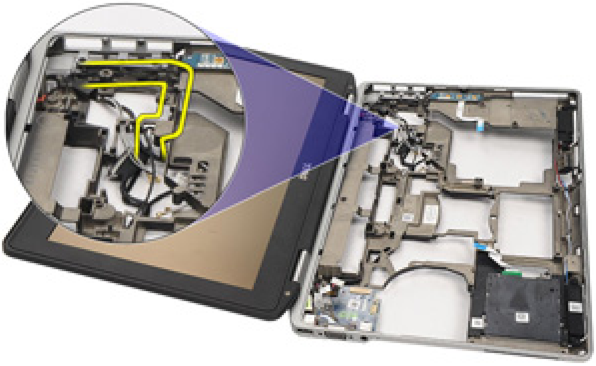
Installing the Speakers

1. Place the speaker back into the system.
2. Route the speaker cable.
3. Tighten the screws securing the speaker assembly.
4. Install the *System Board*.
5. Install the *ExpressCard Cage*.
6. Install the *Palmrest Assembly*.
7. Install the *Modem Card*.
8. Install the *Keyboard*.
9. Install the *Keyboard Trim*.
10. Install the *Bluetooth Card*.
11. Install the *Heat Sink and Processor*.
12. Install the *Coin Cell Battery*.
13. Install the *WWAN Card*.
14. Install the *WLAN Card*.
15. Install the *Hard Drive*.
16. Install the *Memory*.
17. Install the *Optical Drive*.
18. Install the *ExpressCard*.
19. Install the *Base Cover*.
20. Install the *SD Card*.
21. Install the *Battery*.
22. Install the *ATG Port Cover* (only for E6420 ATG systems).
23. Install the *ATG Handle* (only for E6420 ATG systems).
24. Follow the procedures in *After Working Inside Your Computer*.

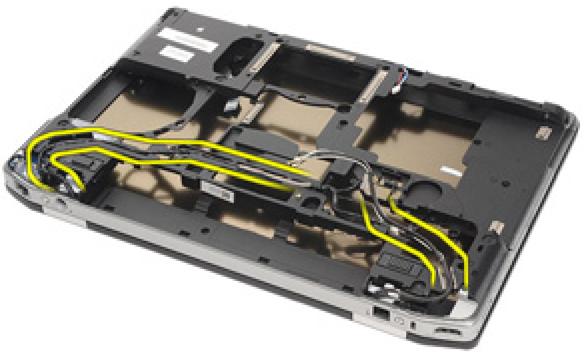
Modem Connector 27

Removing the Modem Connector

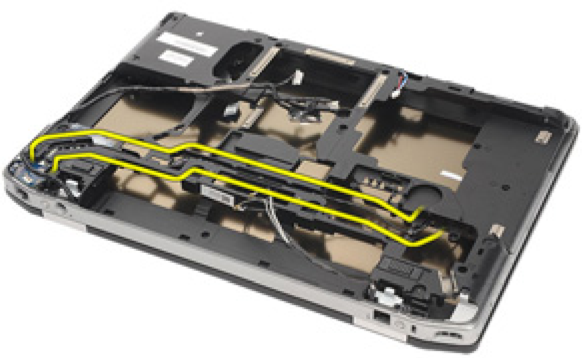
1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *Modem Connector Plug*.
8. Remove the *ExpressCard*.
9. Remove the *Optical Drive*.
10. Remove the *Memory*.
11. Remove the *Hard Drive*.
12. Remove the *WLAN Card*.
13. Remove the *WWAN Card*.
14. Remove the *Coin Cell Battery*.
15. Remove the *Heat Sink and Processor*.
16. Remove the *Bluetooth Card*.
17. Remove the *Keyboard Trim*.
18. Remove the *Keyboard*.
19. Remove the *Modem Card*.
20. Remove the *Palmrest Assembly*.
21. Remove the *ExpressCard Cage*.
22. Remove the *System Board*.
23. Unthread the modem cable.



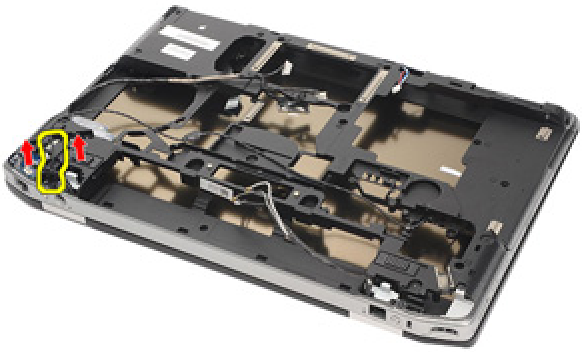
24. Unthread the video and wireless antenna cables.



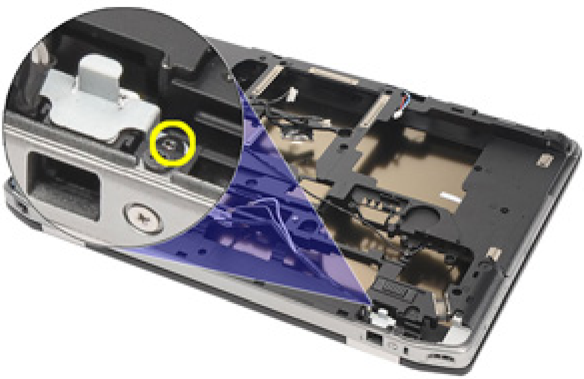
25. Unthread the modem cable.



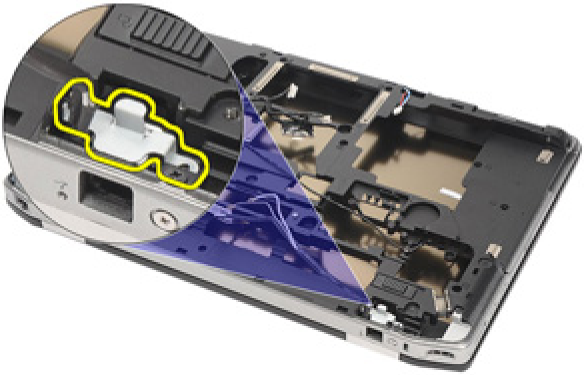
26. Pull out the end of the modem-to-motherboard connector.



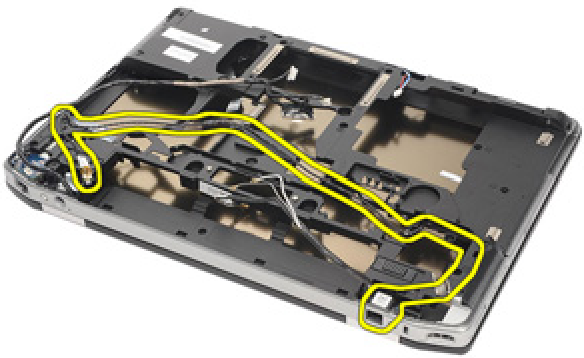
27. Remove screw from modem cable holder.



28. Remove modem cable holder.



29. Remove the whole modem cable assembly by pulling it out from the base.



Installing the Modem Connector

1. Place the modem cable assembly into the base.
2. Place the modem cable holder.
3. Tighten the screw securing the modem cable holder.
4. Connect the end of the modem-to-motherboard connector.
5. Route the modem cable.
6. Route the video and wireless antenna cables.
7. Install the *System Board*.
8. Install the *ExpressCard Cage*
9. Install the *Palmrest Assembly*.
10. Install the *Modem Card*.
11. Install the *Keyboard*.
12. Install the *Keyboard Trim*.
13. Install the *Bluetooth Card*.
14. Install the *Heat Sink and Processor*.
15. Install the *Coin Cell Battery*.
16. Install the *WWAN Card*.
17. Install the *WLAN Card*.
18. Install the *Hard Drive*.
19. Install the *Memory*.
20. Install the *Optical Drive*.
21. Install the *ExpressCard*.
22. Install the *Modem Connector Plug*.
23. Install the *Base Cover*.
24. Install the *SD Card*.
25. Install the *Battery*.
26. Install the *ATG Port Cover* (only for E6420 ATG systems).
27. Install the *ATG Handle* (only for E6420 ATG systems).
28. Follow the procedures in *After Working Inside Your Computer*.

Input/Output Panel 28

Removing the Input/Output (I/O) Board

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *ExpressCard*.
8. Remove the *Optical Drive*.
9. Remove the *Memory*.
10. Remove the *Hard Drive*.
11. Remove the *WLAN Card*.
12. Remove the *WWAN Card*.
13. Remove the *Coin Cell Battery*.
14. Remove the *Heat Sink and Processor*.
15. Remove the *Bluetooth Card*.
16. Remove the *Keyboard Trim*.
17. Remove the *Keyboard*.
18. Remove the *Modem Card*.
19. Remove the *Palmrest Assembly*.
20. Remove the *ExpressCard Cage*.
21. Remove the screw securing the I/O board to the computer.



22. Remove the I/O board from the computer.



Installing the Input/Output (I/O) Board

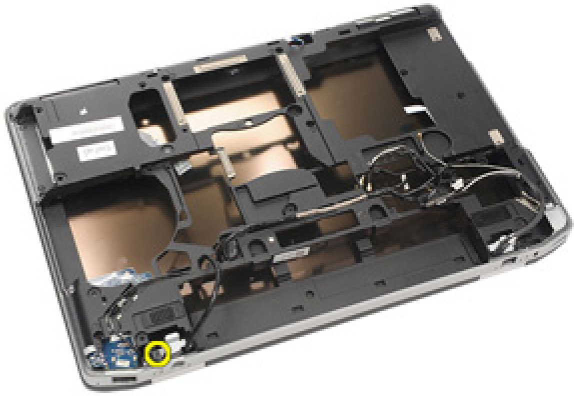
1. Replace the I/O board in the computer.
2. Tighten the screw securing the I/O board to the computer.
3. Install the *System Board*.
4. Install the *ExpressCard Cage*
5. Install the *Palmrest Assembly*.
6. Install the *Modem Card*.
7. Install the *Keyboard*.
8. Install the *Keyboard Trim*.
9. Install the *Bluetooth Card*.
10. Install the *Heat Sink and Processor*.
11. Install the *Coin Cell Battery*.
12. Install the *WWAN Card*.
13. Install the *WLAN Card*.
14. Install the *Hard Drive*.
15. Install the *Memory*.
16. Install the *Optical Drive*.
17. Install the *Express Card*.
18. Install the *Base Cover*.
19. Install the *SD Card*.
20. Install the *Battery*.
21. Install the *ATG Port Cover* (only for E6420 ATG systems).
22. Install the *ATG Handle* (only for E6420 ATG systems).
23. Follow the procedures in *After Working Inside Your Computer*.

DC-In Port

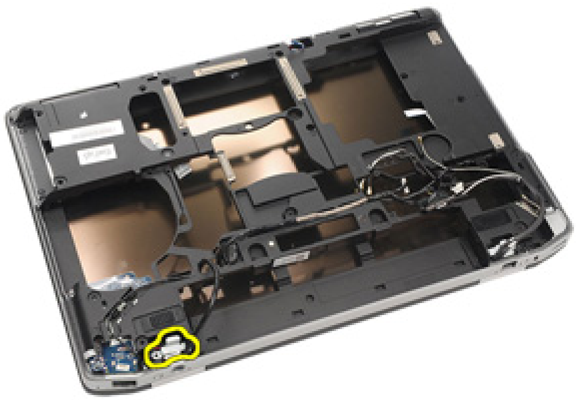
29

Removing DC-in Port

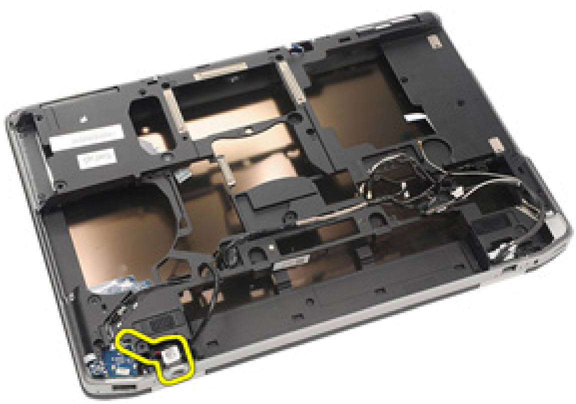
1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *ExpressCard*.
8. Remove the *Optical Drive*.
9. Remove the *Memory*.
10. Remove the *Hard Drive*.
11. Remove the *WLAN Card*.
12. Remove the *WWAN Card*.
13. Remove the *Coin Cell Battery*.
14. Remove the *Heat Sink and Processor*.
15. Remove the *Bluetooth Card*.
16. Remove the *Keyboard Trim*.
17. Remove the *Keyboard*.
18. Remove the *Modem Card*.
19. Remove the *Palmrest Assembly*.
20. Remove the *ExpressCard Cage*.
21. Remove the *System Board*.
22. Remove the screw securing the DC-in bracket.



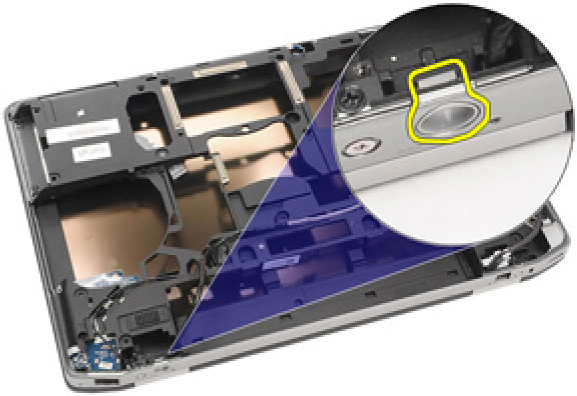
23. Remove the DC-in bracket.



24. Remove the DC-in cable from the system.



25. Push in the DC-in trim and remove it from the system.



Installing DC-In Port

1. Push the DC-in trim and place it into the system.
2. Place the DC-in cable into the system.
3. Insert the DC-in bracket.
4. Tighten the screw securing the DC-in bracket.
5. Install the *System Board*.
6. Install the *ExpressCard Cage*.
7. Install the *Palmrest Assembly*.
8. Install the *Modem Card*.
9. Install the *Keyboard*.
10. Install the *Keyboard Trim*.
11. Install the *Bluetooth Card*.
12. Install the *Heat Sink and Processor*.
13. Install the *Coin Cell Battery*.
14. Install the *WWAN Card*.
15. Install the *WLAN Card*.
16. Install the *Hard Drive*.
17. Install the *Memory*.
18. Install the *Optical Drive*.
19. Install the *ExpressCard*.
20. Install the *Base Cover*.
21. Install the *SD Card*.
22. Install the *Battery*.
23. Install the *ATG Port Cover* (only for E6420 ATG systems).
24. Install the *ATG Handle* (only for E6420 ATG systems).
25. Follow the procedures in *After Working Inside Your Computer*.

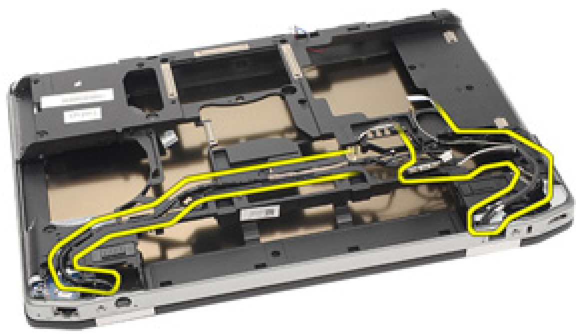
Display Assembly 30

Removing the Display Assembly

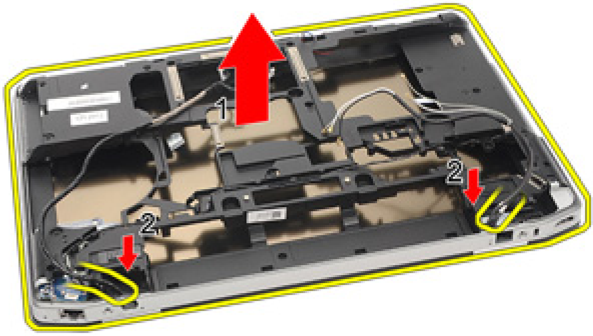
1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *ExpressCard*.
8. Remove the *Optical Drive*.
9. Remove the *Memory*.
10. Remove the *Hard Drive*.
11. Remove the *WLAN Card*.
12. Remove the *WWAN Card*.
13. Remove the *Coin Cell Battery*.
14. Remove the *Heat Sink and Processor*.
15. Remove the *Bluetooth Card*.
16. Remove the *Keyboard Trim*.
17. Remove the *Keyboard*.
18. Remove the *Modem Card*.
19. Remove the *Palm rest Assembly*.
20. Remove the *ExpressCard Cage*.
21. Remove the *System Board*.
22. Remove the *DC-in port*.
23. Remove the screws securing the display assembly to the computer.



24. Unthread the antennas, video, and camera connectors.



25. Lift up the whole bottom base while threading the cable down via the bottom base.


1
2
2

Installing the Display Assembly

1. Align the display assembly into its original position on the computer.
2. Route the antennas, video, and camera connectors.
3. Install the *DC in port*.
4. Install the *System Board*.
5. Install the *ExpressCard Cage*
6. Install the *Palmrest Assembly*.
7. Install the *Modem Card*.
8. Install the *Keyboard*.
9. Install the *Keyboard Trim*.
10. Install the *Bluetooth Card*.
11. Install the *Heat Sink and Processor*.
12. Install the *Coin Cell Battery*.
13. Install the *WWAN Card*.
14. Install the *WLAN Card*.
15. Install the *Hard Drive*.
16. Install the *Memory*.
17. Install the *Optical Drive*.
18. Install the *ExpressCard*.
19. Install the *Base Cover*.
20. Install the *Secure Digital (SD) Card*.
21. Install the *Battery*.
22. Install the *ATG Port Cover* (only for E6420 ATG systems).
23. Install the *ATG Handle* (only for E6420 ATG systems).
24. Follow the procedures in *After Working Inside Your Computer*.

Display Hinges

31

Removing the Display Hinge Covers

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *ATG Handle* (only for E6420 ATG systems).
3. Remove the *ATG Port Cover* (only for E6420 ATG systems).
4. Remove the *Battery*.
5. Remove the *Secure Digital Card*.
6. Remove the *Base Cover*.
7. Remove the *ExpressCard*.
8. Remove the *Optical Drive*.
9. Remove the *Memory*.
10. Remove the *Hard Drive*.
11. Remove the *WLAN Card*.
12. Remove the *WWAN Card*.
13. Remove the *Coin Cell Battery*.
14. Remove the *Heat Sink and Processor*.
15. Remove the *Bluetooth Card*.
16. Remove the *Keyboard Trim*.
17. Remove the *Keyboard*.
18. Remove the *Modem Card*.
19. Remove the *Palmrest Assembly*.
20. Remove the *ExpressCard Cage*.
21. Remove the *System Board*.
22. Remove the *DC-in port*.
23. Remove the *Display Assembly*.
24. Pry the display hinge cover from the left hinge.



25. Remove the display hinge cover from the left hinge.



26. Pry the display hinge cover from the right hinge.



27. Remove the display hinge cover from the right hinge.



Installing the Display Hinge Covers

1. Place the display hinges in the appropriate positions.
2. Replace the display hinge cover to the computer.
3. Install the *Display Assembly*.
4. Install the *DC-in port*.
5. Install the *System Board*.
6. Install the *ExpressCard Cage*
7. Install the *Palmrest Assembly*.
8. Install the *Modem Card*.
9. Install the *Keyboard*.
10. Install the *Keyboard Trim*.
11. Install the *Bluetooth Card*.
12. Install the *Heat Sink and Processor*.
13. Install the *Coin Cell Battery*.
14. Install the *WWAN Card*.
15. Install the *WLAN Card*.
16. Install the *Hard Drive*.
17. Install the *Memory*.
18. Install the *Optical Drive*.
19. Install the *ExpressCard*.
20. Install the *Base Cover*.
21. Install the *SD Card*.
22. Install the *Battery*.
23. Install the *ATG Port Cover* (only for E6420 ATG systems).
24. Install the *ATG Handle* (only for E6420 ATG systems).
25. Follow the procedures in *After Working Inside Your Computer*.

Display Bezel 32

Removing the Display Bezel

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Pry the left and right edges of the display bezel.



4. Work along to the top and bottom edges of the display bezel.



5. Remove the display bezel.



Installing the Display Bezel

1. Place the display bezel into the system.
2. Work along to the top and bottom edges of the display bezel.
3. Press the left and right edges of the display bezel.
4. Install the *Battery*.
5. Follow the procedures in *After Working Inside Your Computer*.

Display Panel 33

Removing the Display Panel

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Remove the *Display Bezel*.
4. Remove the screws securing the display panel to the display assembly.



5. Flip the display panel over.



6. Disconnect the Low-Voltage Differential Signaling (LVDS) cable connector tape from the display panel.



7. Disconnect the Low-Voltage Differential Signaling (LVDS) cable from the display panel.



8. Remove the display panel from the display assembly.



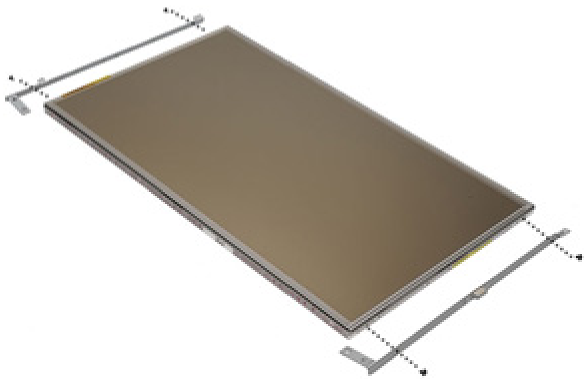
Installing the Display Panel

1. Align the display panel in its original position on the display assembly.
2. Connect the Low-Voltage Differential Signaling (LVDS) cable to the display panel.
3. Tighten the screws securing the display panel to the display assembly.
4. Install the *LCD Bezel*.
5. Install the *Battery*.
6. Follow the procedures in *After Working Inside Your Computer*.

Display Bracket 34

Removing the Display Bracket

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Remove the *Display Bezel*.
4. Remove the *Display Panel*.
5. Remove the screws from each side of the display panel and remove the display brackets.



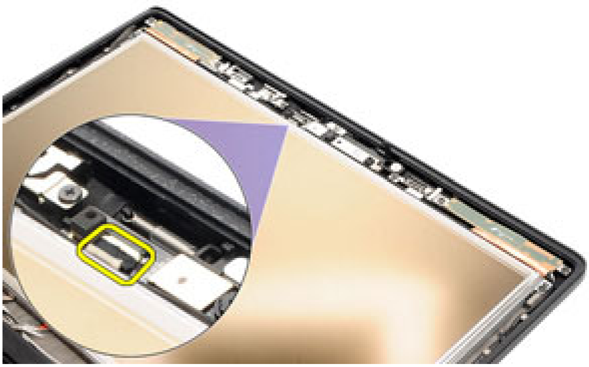
Installing the Display Bracket

1. Place the display brackets and tighten the screws on either side of the display panel.
2. Install the *Display Panel*.
3. Install the *LCD Bezel*.
4. Install the *Battery*.
5. Follow the procedures in *After Working Inside Your Computer*.

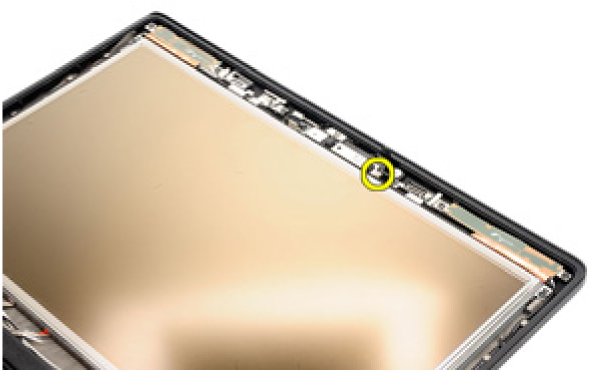
Camera 35

Removing the Camera

1. Follow the procedures in *Before Working On Your Computer*.
2. Remove the *Battery*.
3. Remove the *Display Bezel*.
4. Remove the *Display Panel*.
5. Disconnect the camera cable from the camera.



6. Remove the captive screw securing the camera to the display assembly.



7. Remove the camera from the display assembly.



Installing the Camera

1. Place the camera module in its original position in the display assembly.
2. Tighten the screw securing the camera to the display assembly.
3. Connect the camera cable to the camera.
4. Install the *Display Panel*.
5. Install the *Display Bezel*.
6. Install the *Battery*.
7. Follow the procedures in *After working inside your computer*.

Specifications 36

Technical Specifications

NOTE: Offerings may vary by region. The following specifications are only those required by law to ship with your computer. For more information regarding the configuration of your computer, click **Start** → **Help and Support** and select the option to view information about your computer.

System Information	
Chipset	Intel Mobile Express Series 6 chipset
DRAM bus width	64-bit
Flash EPROM	SPI 32 Mbits
PCIe Gen1 bus	100 MHz

Processor	
Types	• Intel Core i3 series (available only with Latitude E6420 only) • Intel Core i5 series with Turbo Boost technology 2.0 • Intel Core i7 series with Turbo Boost technology 2.0
L2 cache	up to 6 MB
External bus frequency	1333 MHz

Memory	
Memory connector	two SODIMM slots
Memory capacity	1 GB, 2 GB, or 4 GB
Memory type	DDR3 SDRAM (1333 MHz)
Minimum memory	2 GB
Maximum memory	8 GB

Audio	
Type	four-channel high definition audio
Controller	IDT 92HD90
Stereo conversion	24-bit (analog-to-digital and digital-to-analog)
Interface:	
Internal	high definition audio
External	microphone-in/stereo headphones/external speakers connector
Speakers	two
Internal speaker amplifier	0.5 W (typical) per channel
Volume controls	keyboard function keys and program menus

Video	
Video type	• integrated on system board • discrete
Data bus:	
UMA	integrated video
Discrete	• PCI-E x16 Gen1 • PCI-E x16 Gen2
Controller:	
UMA	
Latitude E6420	Intel HD Graphics
Latitude E6420 ATG	Intel HD Graphics 3000
Discrete	NVIDIA NVS 4200M Discrete Graphics (512 MB DDR3)

Communications	
Network adapter	10/100/1000 Mbps Ethernet LAN

Communications	
Wireless	internal wireless local area network (WLAN) and wireless wide area network (WWAN)

Ports and Connectors	
Audio	one microphone connector/stereo headphones/ external speakers connector
Video	• one 15-pin VGA connector • one 19-pin HDMI connector
Network adapter	one RJ-45 connector
USB	three 4-pin USB 2.0-compliant connectors and one eSATA/USB 2.0-compliant connector
Memory card reader	one 5-in-1 memory card reader

Contactless Smart Card	
Supported Smart Cards/Technologies	ISO14443A — 106 kbps, 212 kbps, 424 kbps, and 848 kbps ISO14443B — 106 kbps, 212 kbps, 424 kbps, and 848 kbps ISO15693 HID iClass FIPS201 NXP Desfire

Display	
Type	white Light Emitting Diode (WLED) display
Size	14.0 inch high definition (HD)
Active area (X/Y)	309.40 mm x 173.95 mm
Dimensions:	
Height	192.50 mm (7.58 inches)
Width	324.00 mm (12.76 inches)
Diagonal	355.60 mm (14.00 inches)
Maximum resolution	1366 x 768 pixels at 263 K colors
Maximum Brightness	
Latitude E6420	200 nits

Display	
Latitude E6420 ATG	730 nits
Operating angle	0° (closed) to 135°
Refresh rate	60 Hz
Minimum Viewing angles:	
Latitude E6420	
Horizontal	+/- 40°
Vertical	+10°/-30°
Latitude E6420 ATG	
Horizontal	+/- 50°
Vertical	+/- 40°
Pixel pitch	0.2265 mm

Keyboard	
Number of keys	United States: 86 keys, United Kingdom: 87 keys, Brazil: 87 keys, and Japan: 90 keys
Layout	QWERTY/AZERTY/Kanji

Touchpad	
Active Area:	
X-axis	80.00 mm
Y-axis	40.70 mm

Battery	
Type	• 4-cell "smart" lithium ion (available only with Latitude E6420 only) • 6-cell “smart” lithium ion • 9-cell “smart” lithium ion
Dimensions:	
4-cell and 6-cell	

Battery	
Depth	48.08 mm (1.90 inches)
Height	20.00 mm (0.79 inch)
Width	208.00 mm (8.19 inches)
9-cell	
Depth	71.79 mm (2.83 inches)
Height	20.00 mm (0.79 inch)
Width	214.00 mm (8.43 inches)
Weight:	
6-cell	345.00 g (0.76 lb)
9-cell	524.00 g (1.16 lb)
Charge time for a 6-cell battery with computer off	approximately 1 hour to 80% capacity and 2 hours to 100% capacity.
Voltage	
4-cell	14.80 VDC
6-cell and 9-cell	11.10 VDC
Temperature range:	
Latitude E6420	
Operating	0 °C to 35 °C (32 °F to 95 °F)
Non-Operating	–40 °C to 65 °C (–40 °F to 149 °F)
Latirude E6420 ATG	
Operating	0 °C to 60 °C (32 °F to 140 °F)
Non-Operating	–51 °C to 71 °C (–59 °F to 159 °F)
Coin-cell battery	3 V CR2032 lithium coin cell

AC Adapter		
	Latitude E6420	Latitude E6420 ATG
Type	65 W, 90 W, and 150 W	90 W

AC Adapter		
	NOTE: 65 W AC adapter is available only for computers with integrated video card.	
Input voltage	100 VAC to 240 VAC	100 VAC to 240 VAC
Input current (maximum)	1.50 A/1.60 A/1.70 A/ 2.10 A	1.50 A/1.60 A/1.70 A
Input frequency	50 Hz to 60 Hz	50 Hz to 60 Hz
Output power	65 W, 90 W, and 150 W	90 W
Output current	3.34 A, 4.62 A and 7.70 A (continuous)	4.62 A (continuous)
Rated output voltage	19.5 +/– 1.0 VDC	19.5 +/– 1.0 VDC
Temperature range:		
Operating	0 °C to 40 °C (32 °F to 104 °F)	0 °C to 40 °C (32 °F to 104 °F)
Non-Operating	–40 °C to 70 °C (–40 °F to 158 °F)	–40 °C to 70 °C (–40 °F to 158 °F)

Physical	
Latitude E6420	
Height	26.90 mm to 32.40 mm (1.06 inches to 1.27 inches)
Width	352.00 mm (13.86 inches)
Depth	241.00 mm (9.49 inches)
Weight (with 4-cell battery)	2.07 kg (4.56 lb)
Latitude E6420 ATG	

Physical	
Height	29.00 mm to 37.70 mm (1.14 inches to 1.48 inches)
Width	357.30 mm (14.07 inches)
Depth	246.50 mm (9.70 inches)
Weight (with 6-cell battery and air bay)	2.69 kg (5.93 lb)

Environmental	
Temperature:	
Latitude E6420	
Operating	0 °C to 35 °C (32 °F to 95 °F)
Storage	–40 °C to 65 °C (–40 °F to 149 °F)
Latitude E6420 ATG	
Operating	0 °C to 60 °C (32 °F to 140 °F)*
Storage	–51 °C to 71 °C (–59 °F to 159 °F)
* Tested configuration is without the optical drive	
Relative humidity (maximum):	
Operating	10 % to 90 % (noncondensing)
Storage	5 % to 95 % (noncondensing)
Altitude (maximum):	
Operating	–15.2 m to 3048 m (–50 ft to 10,000 ft)
Non-Operating	–15.2 m to 10,668 m (–50 ft to 35,000 ft)
Airborne contaminant level	G1 as defined by ISA-71.04–1985

System Setup 37

Setup Overview

System Setup allows you to:

- change the system configuration information after you add, change, or remove any hardware in your computer.
- set or change a user-selectable option such as the user password.
- read the current amount of memory or set the type of hard drive installed.

Before you use System Setup, it is recommended that you write down the System Setup screen information for future reference.

CAUTION: Unless you are an expert computer user, do not change the settings for this program. Certain changes can cause your computer to work incorrectly.

Entering System Setup

1. Turn on (or restart) your computer.
2. When the blue DELL logo is displayed, you must watch for the F2 prompt to appear.
3. Once the F2 prompt appears, press <F2> immediately.

NOTE: The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it to display, and then press <F2> . If you press <F2> before you are prompted, this keystroke will be lost.

4. If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop. Then, shut down your computer and try again.

System Setup Menu

The following sections describe the menu options for the System Setup program:

General

Option	Description
System Information	This section lists the primary hardware features of your computer. • System Information • Memory Information • Processor Information • Device Information
Battery Information	Displays the battery status and the type of AC adapter connected to the computer.
Boot Sequence	Allows you to change the order in which the computer attempts to find an operating system. • Diskette Drive • Internal HDD • USB Storage Device • CD/DVD/CD-RW Drive • Onboard NIC • Cardbus NIC You can also choose the Boot List option. The options are: • Legacy • UEFI
Date/Time	Allows you to change the date and time.

System Configuration

Option	Description

NOTE: System Configuration contains options and settings related to integrated system devices. Depending on your computer and installed devices, the items listed in this section may or may not appear.

Integrated NIC	Allows you to configure the integrated network controller. The options are: • Disabled • Enabled

Option	Description
	• Enabled w/PXE Default Setting: Enabled w/PXE
System Management	Allows you to control the systems management mechanism. The options are: • Disabled • DASH/ASF 2.0 Default Setting: DASH/ASF 2.0
Parallel Port	Allows you to configure the parallel port on the docking station. The options are: • Disabled • AT • PS2 • ECP Default Setting: AT
Serial Port	Allows you to configure the integrated serial port. The options are: • Disabled • COM1 • COM2 • COM3 • COM4 Default Setting: COM1
SATA Operation	Allows you to configure the internal SATA hard-drive controller. The options are: • Disabled • ATA • AHCI • RAID On Default Setting: RAID On **NOTE:** SATA is configured to support RAID mode.

Option	Description
USB Controller	Allows you to control the USB controller. The options are: • Enable Boot Support • Enable External USB Port Default Setting: **Enable USB Controller and Enable External USB Port**
Miscellaneous Devices	Allows you to enable or disable the following devices: • Internal Modem • Microphone • eSATA Ports • Hard Drive Free Fall Protection • Module Bay • ExpressCard • Camera You can also enable or disable: • Media Card and 1394 • Enable Media Card only • Disable Media Card and 1394 Default Setting: **Media Card and 1394**
Keyboard illumination	Allows you to configure the keyboard illumination feature. The options are: • Disabled • Level is 25% • Level is 50% • Level is 75% • Level is 100% Default Setting: **Level is 25%**
Drives	Allows you to configure the SATA drives on board. The options are: • SATA-0 • SATA-1 • SATA-4

Option	Description
	• SATA-5 Default Setting: All drives are enabled.

Video

Option	Description
LCD Brightness	Allows you to set the display brightness depending on the power source (On Battery and On AC).
Enable Optimus	This option enables or disables the Nvidia Optimus Technology applicable to Windows 7 only.

Security

Option	Description
Admin Password	Allows you to set, change, or delete the administrator (admin) password. **NOTE:** You must set the admin password before you set the system or hard drive password. **NOTE:** Deleting the admin password automatically deletes the system password and the hard drive password. **NOTE:** Successful password changes take effect immediately. Default Setting: **Not set**
System Password	Allows you to set, change, or delete the system password. **NOTE:** Successful password changes take effect immediately. Default Setting: **Not set**
Internal HDD-0 Password	Allows you to set or change the system's internal hard-disk drive.

Option	Description
	NOTE: Successful password changes take effect immediately. Default Setting: **Not set**
Password Bypass	Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are: • Disabled • Reboot bypass Default Setting: **Disabled**
Password Change	Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set. Default Setting: **Allow Non-Admin Password Changes** is selected
Strong Password	Allows you to enforce the option to always set strong passwords. Default Setting: **Disabled**
OROM Keyboard Access	Allows you to set an option to enter the Option ROM Configuration screens using hotkeys during boot. The options are: • Enable • One Time Enable • Disable Default Setting: **Enable**
TPM Security	Allows you to enable the Trusted Platform Module (TPM) during POST. Default Setting: **Disabled**
Computrace (R)	Allows you to activate or disable the optional Computrace software. The options are: • Deactivate • Disable • Activate

Option	Description
	NOTE: The Activate and Disable options will permanently activate or disable the feature and no further changes will be allowed. Default Setting: **Deactivate**
CPU XD Support	Allows you to enable the Execute Disable mode of the processor. Default Setting: **Enabled**
Non-Admin Setup Changes	Allows you to determine whether changes to the setup options are allowed when an Administrator Password is set. If disabled, the setup options are locked by the admin password. Default Setting: **Disabled**
Password Configuration	Allows you to determine the minimum and maximum length of Administrator and System passwords.
Admin Setup Lockout	Allows you to prevent users from entering Setup when an Administrator password is set. Default Setting: **Disabled**

Performance

Option	Description
Multi Core Support	Allows you to enable or disable multi-core support for the processor. The options are: • All • 1 • 2 Default Setting: **All**
Intel SpeedStep	Allows you to enable or disable the Intel SpeedStep feature. Default Setting: **Enabled**
C-States Control	Allows you to enable or disable the additional processor sleep states.

Option	Description
	Default Setting: The options **C states**, **C3**, **C6**, **Enhanced C-states**, and **C7** options are selected/enabled.
Limit CPUID	Allows you to limit the maximum value the processor Standard CPUID Function will support. Default Setting: **Enable CPUID Limit**
Intel TurboBoost	Allows you to enable or disable the Intel TurboBoost mode of the processor. Default Setting: **Enabled**
HyperThread Control	Allows you to enable or disable the HyperThreading in the processor. Default Setting: **Enabled**

Power Management

Option	Description
AC Behavior	Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected. Default Setting: **Wake on AC** is not selected.
Auto On Time	Allows you to set the time at which the computer must turn on automatically. The options are: • Disabled • Every Day • Weekdays Default Setting: **Disabled**
USB Wake Support	Allows you to enable USB devices to wake the system from Standby. Default Setting: **Disabled**

Option	Description
	NOTE: This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup will remove power from all of the USB ports to conserve battery power.
Wireless Radio Control	Allows you to enable or disable the feature that automatically switches from wired or wireless networks without depending on the physical connection. Default Setting: The options **Control WLAN radio** and **Control WWAN radio** are selected.
Wake on LAN/WLAN	This field allows the computer to power up from the off state when triggered by a special LAN signal or from Hibernate state when triggered by a special wireless LAN signal. Wake-up from the Standby state is unaffected by this setting and must be enabled in the operating system. This feature only works when the computer is connected to AC. • Disabled — Does not allow the system to power on when it receives a wake-up signal from the LAN or wireless LAN. • LAN Only — Allows the system to be powered on by special LAN signals. • WLAN Only — Allows the system to be powered on by special WLAN signals. • LAN or WLAN — Allows the system to be powered on by special LAN or wireless LAN signals. Default Setting: **Disabled**
ExpressCharge	Allows you to enable or disable the ExpressCharge feature. The options are: • Standard • ExpressCharge Default Setting: **ExpressCharge**

POST Behavior

Option	Description
Adapter Warnings	Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters. Default Setting: **Enable Adapter Warnings** is selected.
Keypad (Embedded)	Allows you to choose one or two methods to enable the keypad that is embedded in the internal keyboard. • Fn Key Only • By Num Lk Default Setting: **Fn Key Only**
Mouse/Touchpad	Allows you to define how the system handles mouse and touchpad input. The options are: • Serial Mouse • PS2 Mouse • Touchpad/PS-2 Mouse Default Setting: **Touchpad/PS-2 Mouse**
Numlock Enable	Allows you to enable the Numlock option when the computer boots. Default Setting: **Enable Numlock** is selected.
Fn Key Emulation	Allows you to set the option where the <Scroll Lock> key is used to simulate the <Fn> key feature. Default Setting: **Enable Fn Key Emulation** is selected.
POST HotKeys	Allows you enable the sign-on screen message display indicating the keystroke sequence to access the System Setup option menu. Default Setting: **Enable F12 Boot Option Menu** is selected.
Fastboot	Allows to set the option to speed up the boot process. The options are:

Option	Description
	• Minimal • Thorough • Auto Default Setting: **Thorough**

Virtualization Support

Option	Description
Virtualization	Allows you to enable or disable the Intel Virtualization Technology. Default Setting: **Enable Intel Virtualization Technology** is selected.
VT for Direct I/O	Allows you to enable or disable Virtualization Technology for Direct I/O. Default Setting: **Disabled** is selected.
Trusted Execution	This option specifies whether a Measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities provided by Intel Trusted Execution Technology. The TPM Virtualization Technology and Virtualization Technology for Direct I/O must be enabled to use this feature. Default Setting: **Disabled** is selected.

Wireless

Option	Description
Wireless Switch	Allows you to set the wireless devices that can be controlled by the wireless switch. The options are: • WWAN • WLAB • Bluetooth Default Setting: All the options are selected.
Wireless Device Enable	Allows you to enable or disable the wireless devices.

Option	Description
	Default Setting: All the options are selected.

Maintenance

Option	Description
Service Tag	Displays the Service Tag of your computer. **NOTE:** If a Service Tag has not been set for this system, the computer will automatically bring up this screen when users enter the BIOS. You will be prompted to enter the Service Tag.
Asset Tag	Displays the Asset Tag.

System Logs

Option	Description
BIOS Events	Allows you to view and clear the System Setup (BIOS) POST events.
DellDiag Events	Allows you to view and clear the DellDiag events.
Thermal Events	Allows you to view and clear the Thermal events.
Power Events	Allows you to view and clear the Power events.

Diagnostics 38

Diagnostic LED Codes

The following table shows the possible LED codes that may display when your computer is unable to complete a power on self test.

Appearance			Description	Next Step
Storage LED	Power LED	Wireless LED		
Blinking	Solid	Solid	The micro-controller is handing control of the system to the processor. This code persists if no processor is detected.	Replace the processor.
Solid	Blinking	Solid	Memory is detected but has errors.	1. Re-seat the memory. 2. If two modules are installed, remove one and test. Try the other module in the same slot and test. Test the other slot with both modules. 3. Replace the memory. 4. Replace the system board.
Blinking	Blinking	Blinking	System board error	Replace the system board.
Blinking	Blinking	Solid	Video card error	Replace the system board.
Blinking	Blinking	Off	Keyboard error	1. Re-seat the keyboard cable. 2. Replace the keyboard.

Appearance			Description	Next Step
Blinking	Off	Blinking	USB controller error	Unplug the USB device (if any)
Solid	Blinking	Blinking	No SODIMMs are installed	1. Install supported memory modules. 2. If memory is already present, re-seat the module(s) one at a time in each slot. 3. Try known good memory from another computer or replace the memory. 4. Replace the system board.
Blinking	Solid	Blinking	Display panel error	1. Re-seat the display cable. 2. Replace the display panel. 3. Replace the video card/ system board.
Off	Blinking	Blinking	Modem error	1. Re-seat the modem. 2. Replace the modem. 3. Replace the system board.

Battery Status Lights

If the computer is connected to an electrical outlet, the battery light operates as follows:

- **Alternately blinking amber light and blue light** — An unauthenticated or unsupported non-Dell AC adapter is attached to your laptop.
- **Alternately blinking amber light with steady blue light** — Temporary battery failure with AC adapter present.
- **Constantly blinking amber light** — Fatal battery failure with AC adapter present.
- **Light off** — Battery in full charge mode with AC adapter present.
- **Blue light on** — Battery in charge mode with AC adapter present.

Device Status Lights

Turns on when you turn on the computer and blinks when the computer is in a power management mode.

Turns on when the computer reads or writes data.

Turns on steadily or blinks to indicate battery charge status.

Turns on when wireless networking is enabled.

Contacting Dell 39

Contacting Dell

NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit **support.dell.com**.
2. Select your support category.
3. If you are not a U.S. customer, select your country code at the bottom of the page, or select **All** to see more choices.
4. Select the appropriate service or support link based on your need.